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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,029	10/17/2001	Meenakshi V. Sundar	25184-P041US/	5623

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12/14/2004

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EXAMINER
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ALVO, MARC S

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/981,029

Applicant(s)

SUNDAR ET AL.

Examiner

Steve Alvo

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(e) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-41, 45, 46 and 48 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over GB 2 265 916.

GB 2 265 916 providing a fibrous pulp suspension and depositing calcium carbonate on the fibers by reacting a first positive charged reactant ( $\text{Ca}^{++}$ ) and negatively charged second reactant ( $\text{CO}_3^{--}$ ). See, GB 2 265 916, page 9, lines 6-34. If necessary, it is obvious that a time effective to facilitate precipitation as the ( $\text{CO}_3^{--}$ ) is introduced after the mixture of ( $\text{Ca}^{++}$ ) and pulp has stabilized. The freeness of the instant product would be the same as that as GB 2 265 916 as they are formed on the same material in the same manner. See page 10, lines 23-27 for 60% by weight precipitated calcium carbonate (PCC). See page 9, line 17, for consistency of 5%; See page 10, lines 14-17, for adding flocculants and dispersants; see page 10, lines 4-10 for pH of 7.0 to 10.0. The steps of producing the product can not be given probative weight in a

product claim, e.g. the types and order of reactants. These are method steps. The product claimed does not differ over the product of GB 2 265 916. Any difference would have been obvious over the teachings of GB 2 265 916.

Claims 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 265 916 as applied to claim 26 above, and further in view of WO 99/42657 (US equivalent 6,387,212 (CHRISTIAN) used as translation).

WO 99/42657 teaches forming calcium carbonate precipitate wherein the first reactant is calcium carbonate and the second reactant is calcium hydroxide allows the calcium carbonate to be prepared "in situ". If any weight is given to the method steps of how the calcium carbonate is precipitated, then it would have been obvious to first react the calcium carbonate with carbon dioxide and then react the resultant calcium bicarbonate with carbon dioxide to form the calcium carbonate precipitated on the fibers "in situ" in the manner taught by WO 99/42657. See translation, column 4, lines 42-65).

Claims 42-44 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 265 916 as applied to claim 26 above, and further in view of DEPASQUALE et al (5,827,398).

If necessary, DEPASQUALE et al teaches controlling the zeta potential during papermaking using calcium carbonate filler. It would have been obvious to add a cationic charge to aid retention, when making a paper from the filled fiber of GB 2 265 916, as taught by DEPASQUALE et al. It would have been obvious to treat recycled paper or broke as such is taught by DEPASQUALE et al (column 7, lines 6-10). It would have been obvious to precipitate calcium carbonate on the fibers as crystals having a size of 0.1 to 10 micrometers, as such results

in the precipitation of calcium carbonate when precipitated in the manner taught by  
DEPASQUALE et al (column 4, lines 44-50).

Claims 26-42 and 45-48 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the  
alternative, under 35 U.S.C. 103(a) as obvious over DOELLE (6,355,138).

DOELLE teaches "The calcium carbonate thus produced by the chemical reaction is  
effectively loaded into the lumen and grown as crystals on the fiber walls of a substantial portion  
of the fibers within the fiber suspension by controlling the initial process pH, temperature,  
pressure, reaction time, lime slaking temperature and lime average particle size within inner  
chamber 22. Dependent upon the specific application for which the fiber suspension is to be  
utilized (e.g., paper, carton, cardboard, tissue, etc.) the different types of crystals which may be  
grown on and in the fiber walls as well as on the fiber surface and between fibers of the  
individual fibers provide different physical properties to the resultant end product in the form of  
a fiber web. By precisely monitoring and controlling the initial process pH, reaction temperature,  
reaction pressure, reaction time, lime slaking temperature and lime average particle size as  
indicated above, a specific type of calcium carbonate crystal is controllably grown on the fiber  
walls, thereby altering the physical properties of the resultant fiber web." (Emphasis added).  
It would have been obvious to the routineer that the gas used to process the suspension is a  
chemical used in papermaking. DOELLE teaches depositing precipitated calcium carbonate in a  
variety of shapes, e.g. sclenohedral, rhombohedral, aciculares, aragonite and spherical (column 4,  
lines 17-18) wherein the calcium carbonate is precipitated by interaction with carbon dioxide  
generated using a combustion process associated with processing the fiber suspension, see  
DOELLE, column 3, lines 9-14. DOELLE further teaches dependent upon the specific

application for which the fiber suspension is to be utilized (e.g., paper, carton, cardboard, tissue, etc.) the different types of crystals which may be grown on and in the fiber walls as well as on the fiber surface and between fibers of the individual fibers provide different physical properties to the resultant end product in the form of a fiber web.” See, DOELLE, column 4, lines 2-14 and lines 18-23, for growing different types of crystals on and in the fiber walls. See DOELLE, column 1, line 13 for wood fibers and abstract for consistency of 15 to 30%. The process steps of forming the product, e.g. claims 4, 5 and 12, and its intended use, e.g. claims 13-15, can not be given probative weight in a product claim. DOELLE treats the same type of material as Applicant and the material would contain the same amount of native calcium carbonate. The product of DOELLE does not differ from the claimed product. The steps of producing the product can not be given probative weight in a product claim. Any difference would have been obvious over the teachings of DOELLE

Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over DOELLE (6,355,138) claim 1 above, and further in view of DEPASQUALE et al (5,827,398).

If necessary, DEPASQUALE et al teaches controlling the zeta potential during papermaking using calcium carbonate filler. It would have been obvious to add a cationic charge to aid retention, when making a paper from the filled fiber of DOELLE, as taught by DEPASQUALE et al.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Alvo whose telephone number is 571-272-1185. The examiner can normally be reached on 5:45 AM - 2:15 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steve Alvo  
Primary Examiner  
Art Unit 1731

msa